ABSTRACT

DISSERTATION: Middle School Mathematics, Student Growth, and the Role of Technology-Assisted, Independent Practice

STUDENT: Devin Arms

DEGREE: Doctor of Education in Educational Administration and Supervision

COLLEGE: Teachers College

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This study assessed the influence of technology-assisted, individualized mathematics practice on mathematics proficiency growth in a sample of 7th grade students using a quantitative, quasi-experimental research design. The quasi-experimental design used in the study leveraged a nonequivalent (pretest and posttest) control-group with nonrandom treatment and control group assignment of participants. A three-way ANOVA was used to test the interaction effect between usage of the IXL program and mathematics proficiency growth while taking into account the moderator variables of student gender and lunch program status.

The results showed that female students demonstrated higher rates of mathematics proficiency growth compared to their male classmates when controlling for other variables. This finding was especially significant for female students with the lunch program status of free or reduced lunch and female students who independently practiced mathematics skills using IXL. The study's analysis of technology-assisted, individualized mathematics practice and its effect on mathematics proficiency growth provides educational leaders with a point of reference as they consider how these types of programs are being implemented in their school or school district.